



CDW Process Review

Communication
Participation
Process
Observations



Purpose and Objectives



Two Big Questions

1 What are we trying to achieve?

- CDW Goal = Accepted Concept Design

2 When does this end?

- Benefits of **Complete CDW** vs **Timely CDW**
- Flexible plan for workshops is key to success
- Willingness to change schedule is key to success
- More diligence spent early saves time / money / material later



Communication



Communication with Government:

- Let the government know what you plan to do
 - Meet and describe the plan for the CDW workshop
- Determine all Participants critical to a successful CDW
- Plan with flexibility in mind
 - Process can bog or may skip major issues if a schedule is too rigid
- Not all projects are the same
- No single presentation style is correct for all CDW workshops



Communication (con't)



End-Users and Base:

- Tailor discussions with end users in mind these are generally non architects or engineers and not design/construction/contract oriented
- Describe process and where user input is critical
- Prepare questions to gain better understanding of the projects requirements
- Start at the beginning and walk through the process of generating the concept as opposed to “here it is”
- Avoid hard line working drawings
 - Gives the impression the design is complete and changes are difficult
 - *Use crayons & flimsies*



Participation



Critical to have the right participants attend at the right time

- Require people that have needed information and can make decisions

Think sequential not simultaneous meetings

- Breakout sessions are only effective if properly managed
 - Efficiently use time
 - Don't force key people to participate in concurrent sessions
- Concurrent sessions are an ineffective Breakout Session strategy
 - Wrong person sent for decision makers

Partnering scheduled prior to CDW is an effective technique

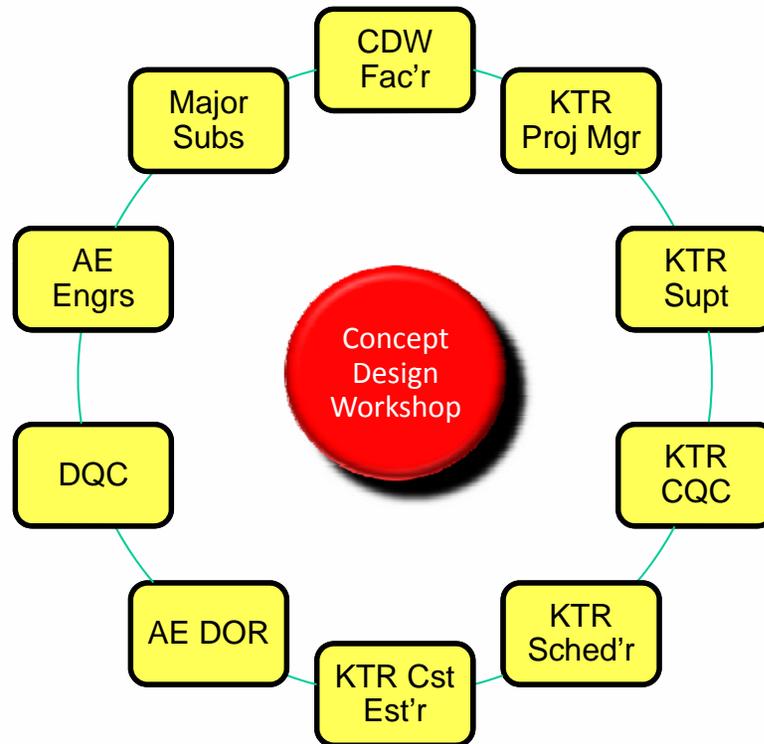
- Usually brings Decision Makers for A/E or Prime
- Remote participation enabled thru technology
- Decision Maker's schedule must still allow their remote participation

DB Contractor CDW Participants



UFGS 01 31 19.05 20, Paragraph 1.3.5.1:

- Qualified CDW Facilitator (Complex Projects)
- DB Contractor Project Manager
- DB Contractor Project Superintendent
- DB Contractor Project QC Manager
- DB Contractor Project Scheduler
- DB Contractor Cost Estimator
- DB Contractor Prime AE Designer of Record
- DB Contractor's DQC
- AE DOR & Consultant Discipline Engineers
- Major Subcontractors

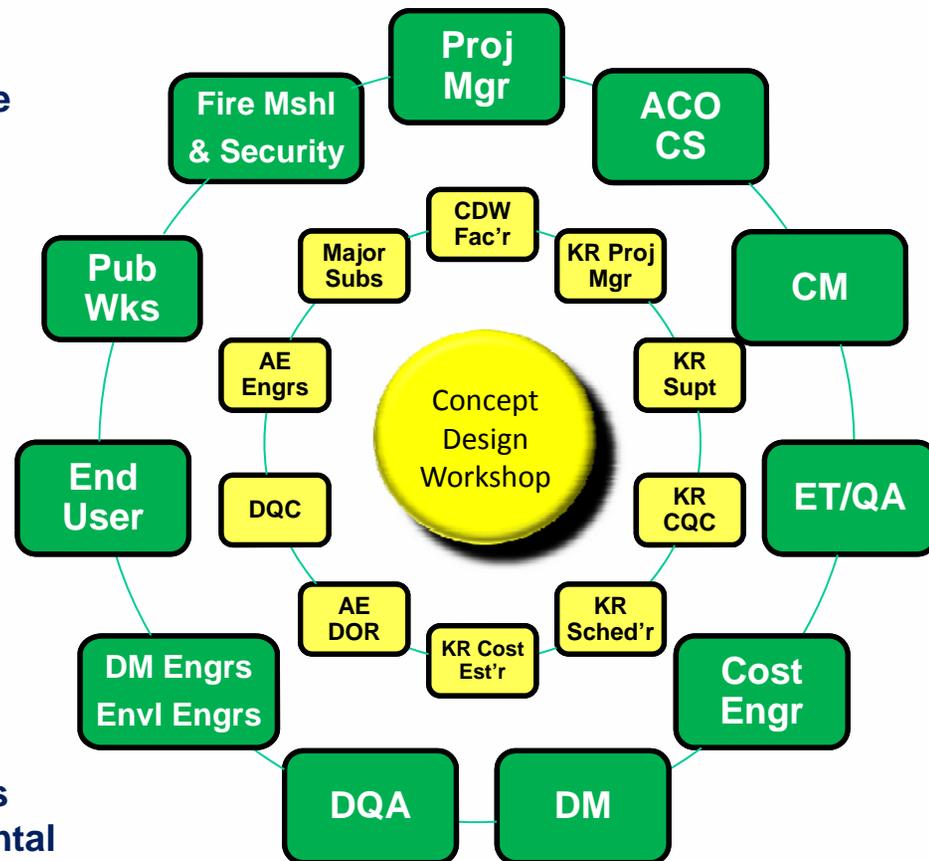


DB Contractor CDW Participants

Government Participants



- Project End User
- Activity Public Works Staff Representative Including any Special Systems Reps
- Fire Marshall & Base Security
- Project Manager
- Design Manager & DQA
- Construction Manager
- Engineering Technician
- Contract Specialist – ACO
- Design Management Technical Staff (CE, RA, SE, ME, EE, FPE, LA, ID, Soils Engineer – Don't forget the Environmental Engineers)
- Cost Engineer



Government CDW Participants



Process



3 Step CDW Process:

- 1) **Preparation** - Pre CDW Planning and Communication
- 2) **CDW Workshop** - Design Sessions/Presentation and acceptance of the design
- 3) **Final CDW Report** and Review process



Process – Pre CDW Planning



1) Preparation - Pre CDW Planning and Communication

- Initial Concept to Government 14 days prior to CDW
- Select Facilitator
- Choose Venue
- ***Prepare Plan and review for acceptance with Government***
- Identify and schedule all required participants
- Allow for FLEXIBILITY



Process – CDW Workshop



2) CDW Workshop

- Overview and explanation of the proposed concept
- Review and address user requirements
- Confirm compliance with RFP and UFC Criteria
- Develop Alternative Concept Designs as needed (may involve multiple iterations)
- Identify design problems and either resolve or develop course for resolution
- Resolve cost or schedule issues – design choices/changes and/or trade offs
- Critical Step - Front-to-Back presentation and Final Concept presentation
- Consensus reached that the Final Concept meets all criteria and expectations

Common Issue at CDWs

- Haphazardly captured issues doesn't foster good issue resolution



Process – Final CDW Report

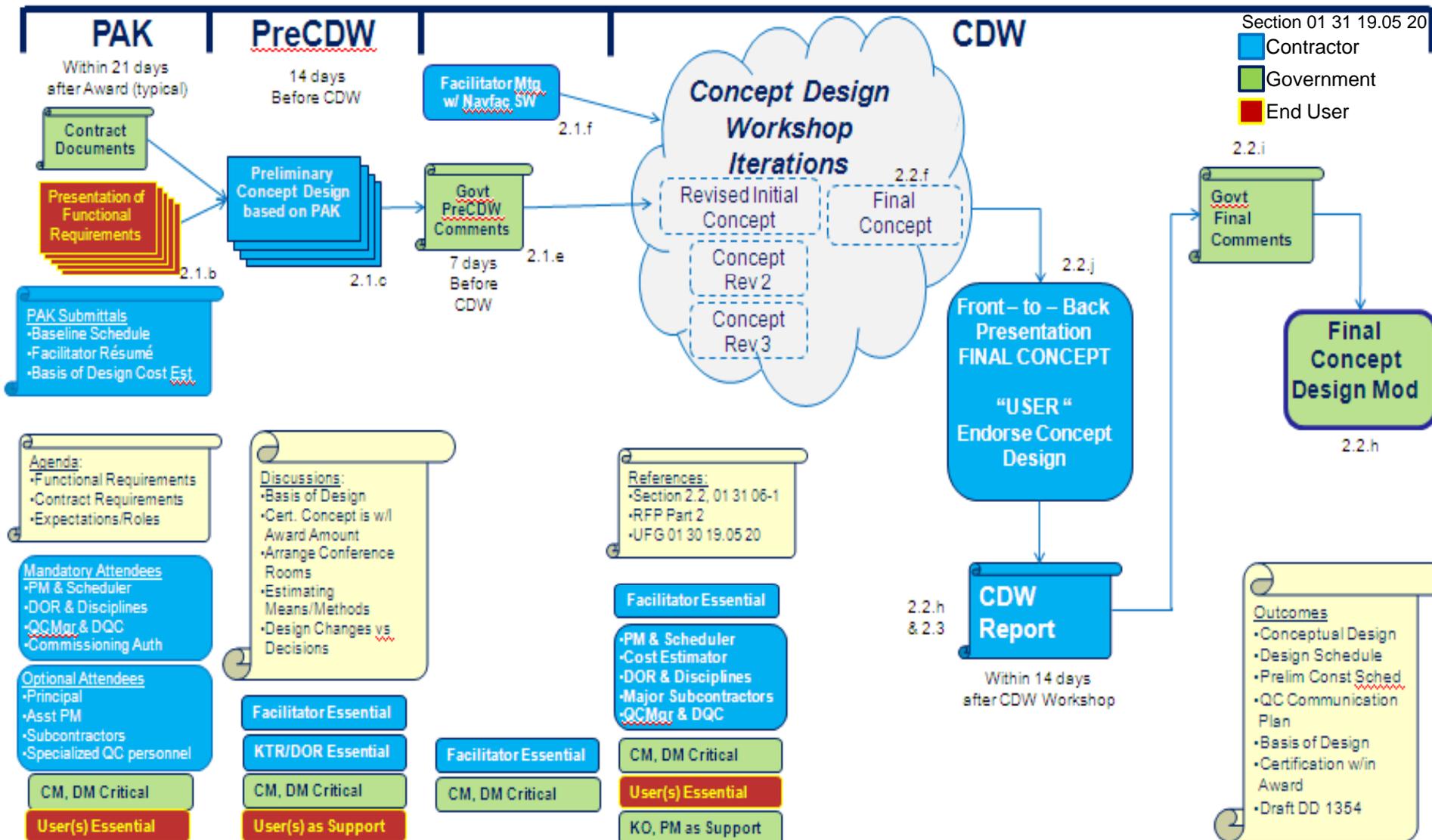


3) Final CDW Report (14 days after conclusion of CDW)

- Must be complete or it will be returned
- Contains notes of all decisions made and alternative designs
- List of attendees
- Basis of Design
- List of all design change items discussed/ proposed that involve cost
- Government Review & comments
- Resubmittals if necessary
- Acceptance of Final CDW Report → Move to Design Development



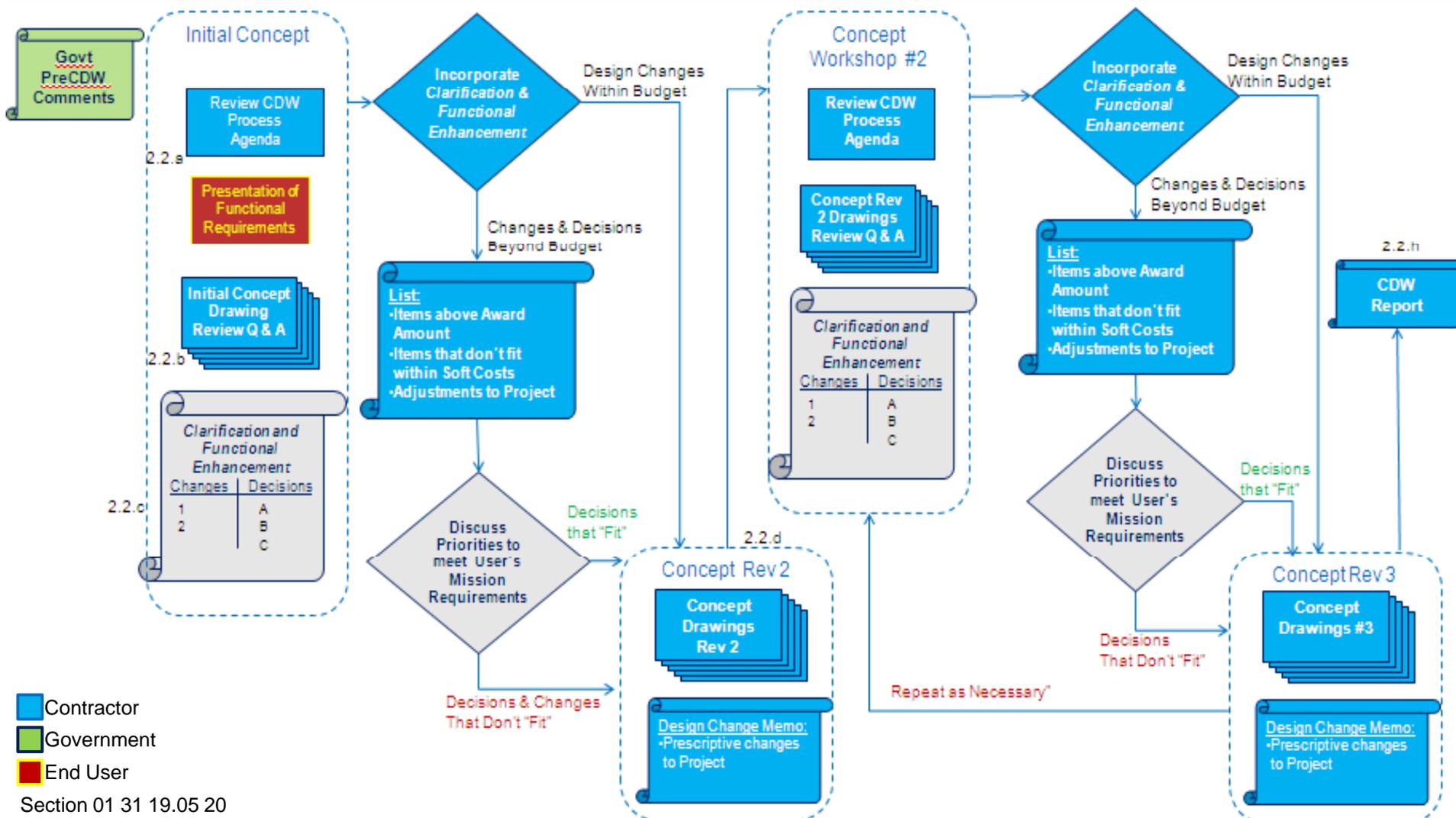
Award to Final Concept Design





Concept Design Workshop

Design Concept Iterations

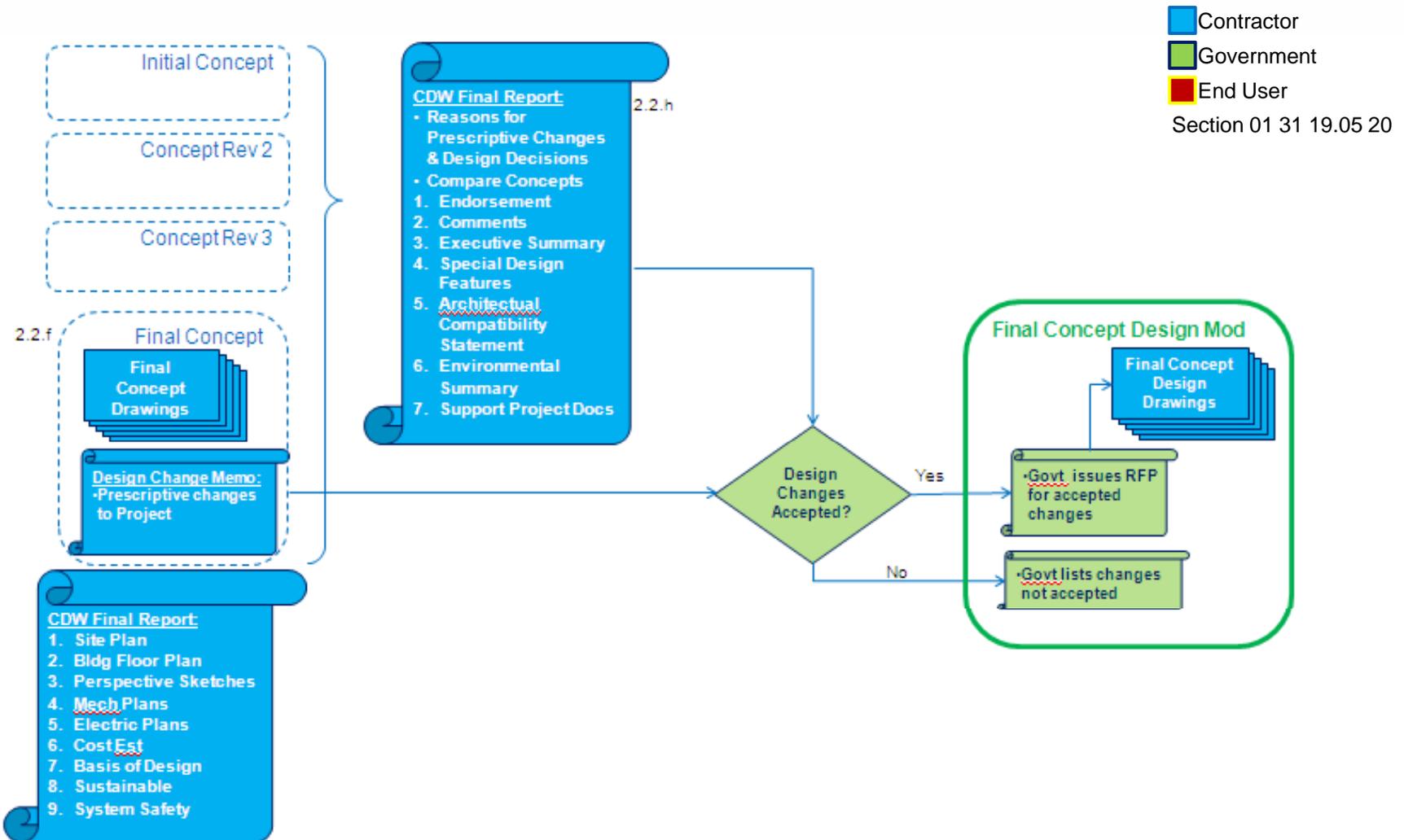


Section 01 31 19.05 20



Concept Design Workshop

Final Concept to Final Design

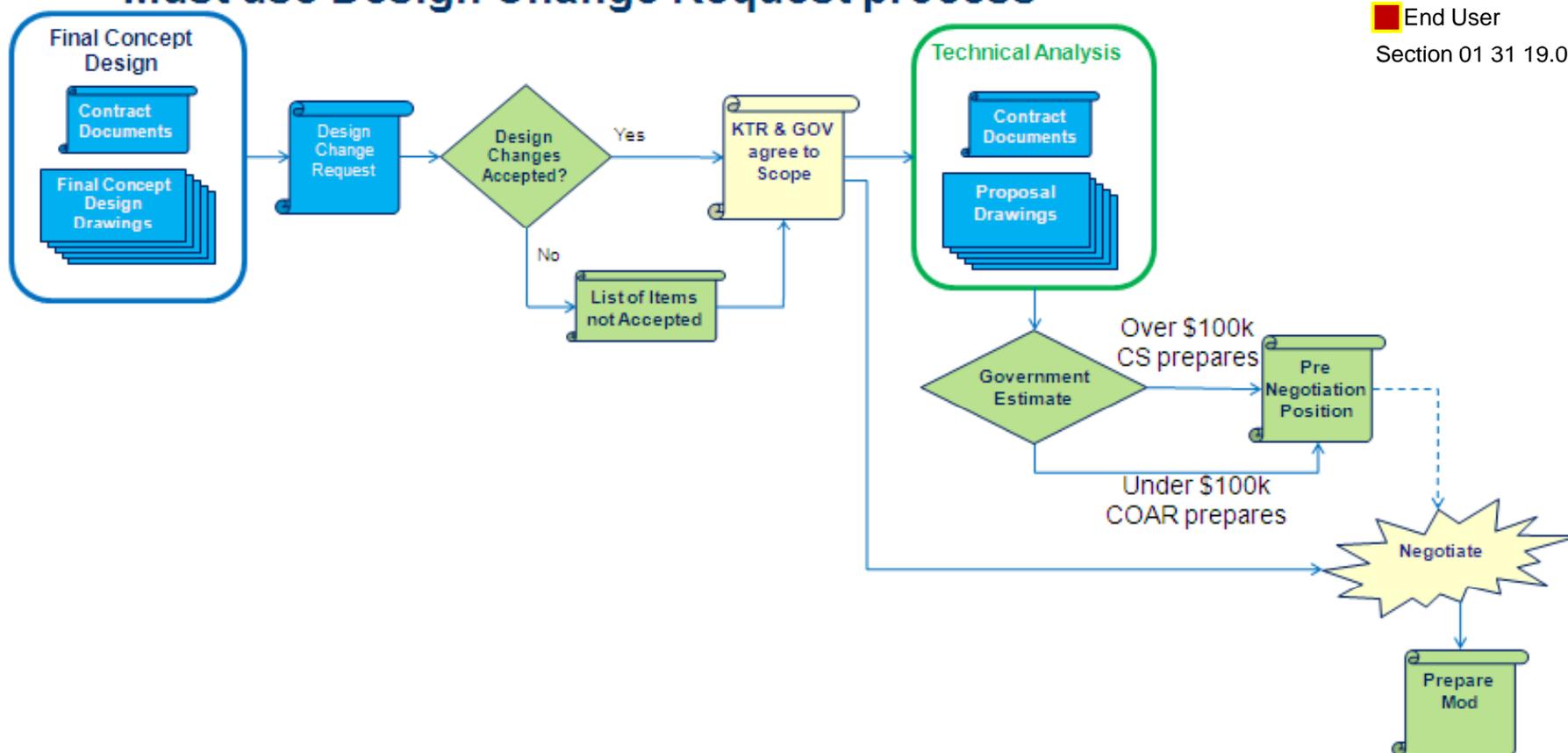




Changes after Final Concept Design



Must use Design Change Request process





CDW Case Studies



- **What are the milestones?**
- **CDW timelines?**
- **How well did we follow the process?**
- **Lessons Learned (improvements and challenges)**



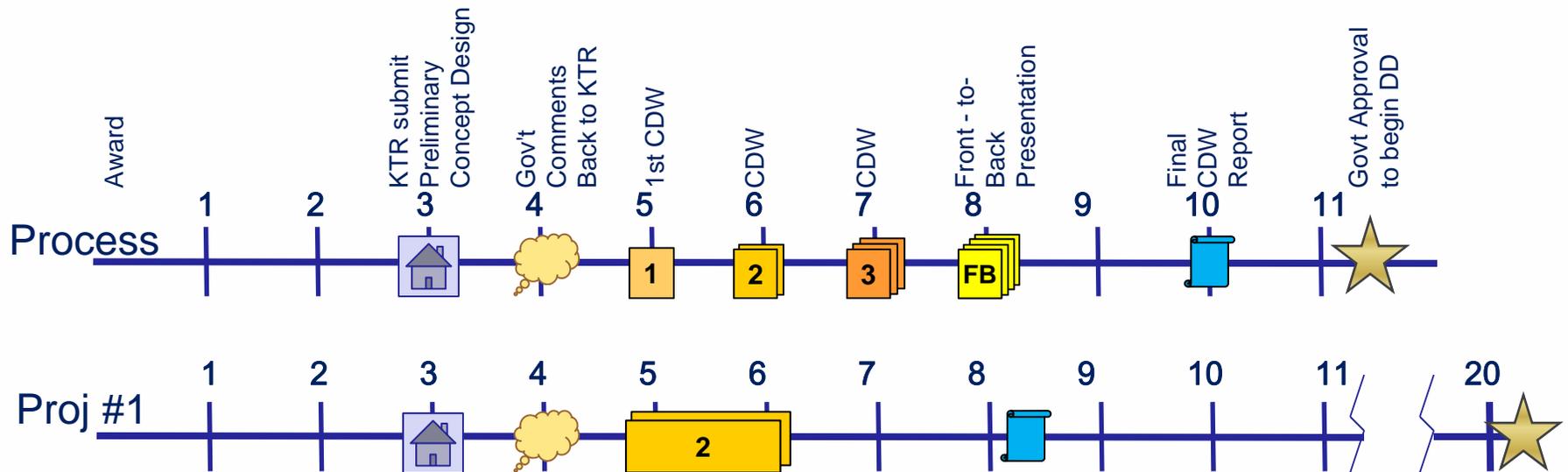
CDW Surveys



- **Questionnaire to capture improvements & challenges**
Section 01 31 19.05 20 Appendix 01 31 06-1 CDW
 - 5 questions on Pre CDW
 - 11 questions on Conducting CDW
 - 8 questions on meeting requirements of the Final Concept
 - 5 questions on meeting requirements of the CDW Final Report
- **Sample recent CDWs**
- **Review feedback for Trends / Leading Indicators**
 - 5 Contractors and 3 Gov't DMs



CDW Case Study #1

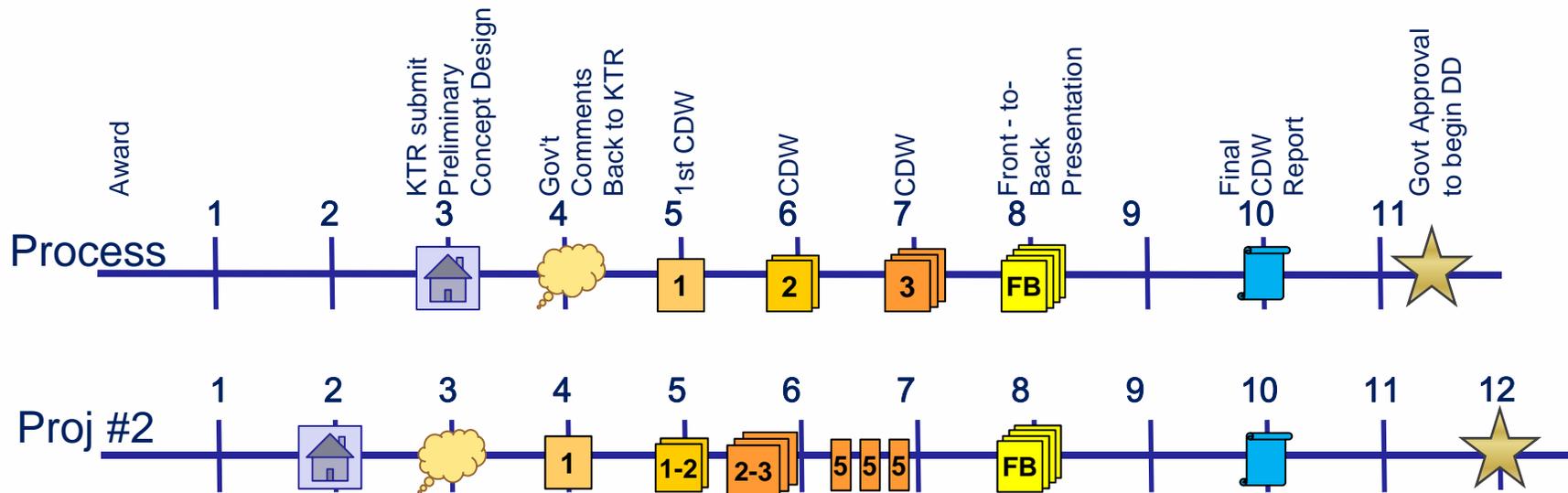


• Lessons learned

- Not conducting the Front-to-Back Presentation
 - Inadequate Final CDW Report
 - Delayed Gov't Acceptance
- Incomplete agreement
 - Delayed Gov't Acceptance



CDW Case Study #2



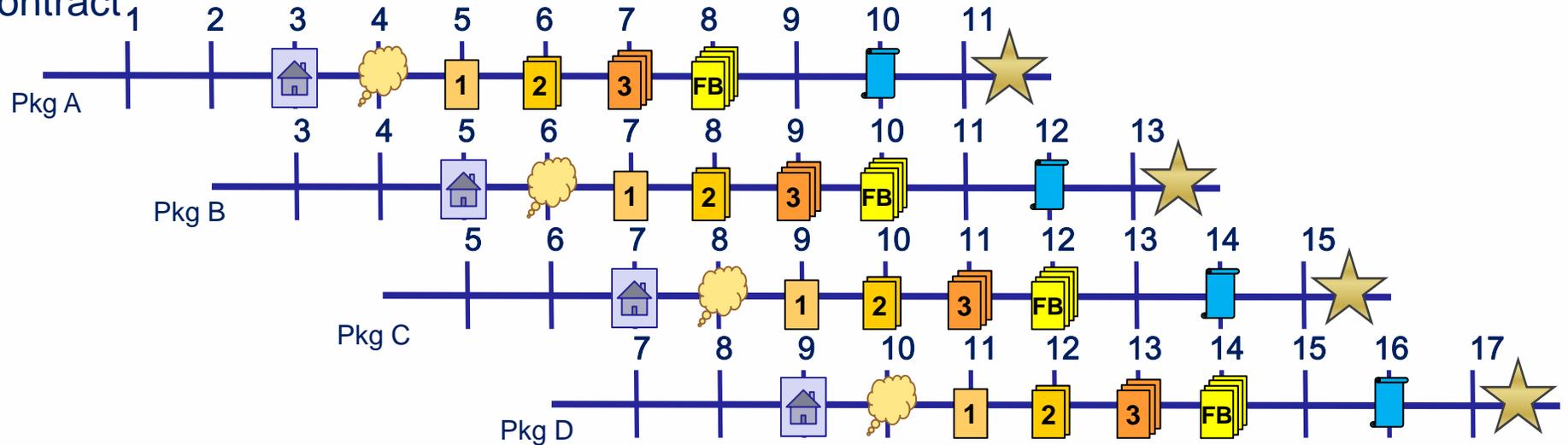
- ✓ People invited early in schedule
- ✓ Excellent CDW facilitation
 - ✓ held closely to the Agenda / Schedule
 - ✓ Break out meetings with SMEs worked well
- Forgot to resolve the cost of time
- Design oversight caused re-design (lost 2 months)



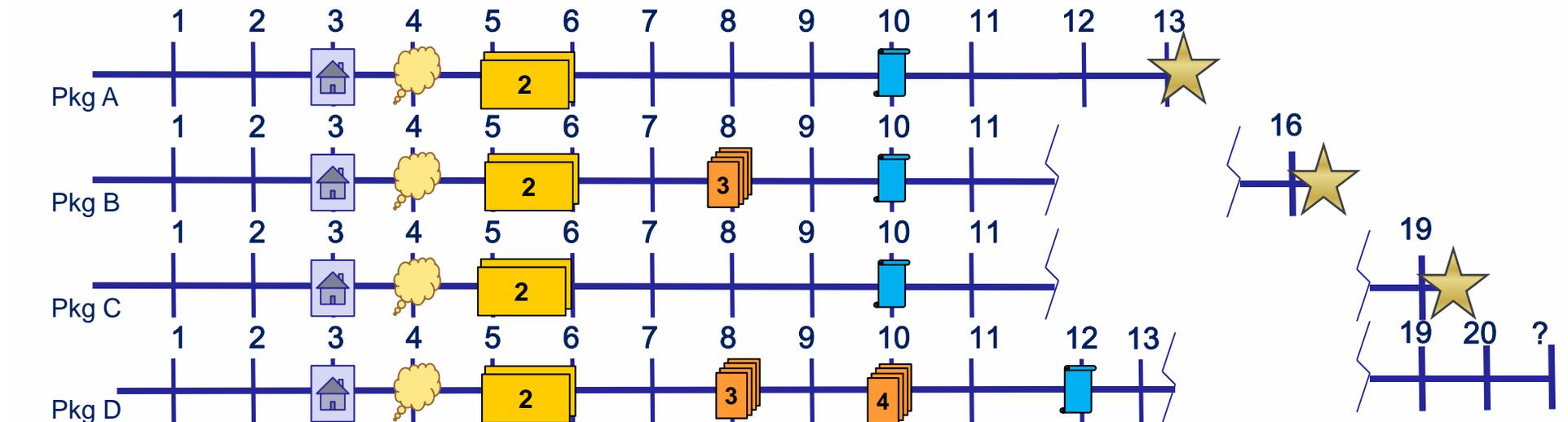
CDW Case Study #3



Contract



KTR's CDW execution





Take-Aways



- **Maximize User / Clients involvement in CDW**
- **Take time to consider implications**
- **Hold Focus Group (SME) meetings before final CDW**
- **Schedule multiple projects CDWs independently**
 - **Allows effective participation**
 - **Allows Change Control coordination**
- **Empower CDW attendees to make decisions**
- **Agree to estimating requirements**
- **Track & incorporate comments through resolution**
- **Check Environmental Docs against RFP Requirements**
- **Centrally vet comments**
- **FOLLOW / ENFORCE THE PROCESS**



Design Choice vs Design Change in Design Build Contracts

Explanations, Examples and Exercises

LCDR Mcbee & Jim Ward

17 July 2012



DB Design Decision Processes

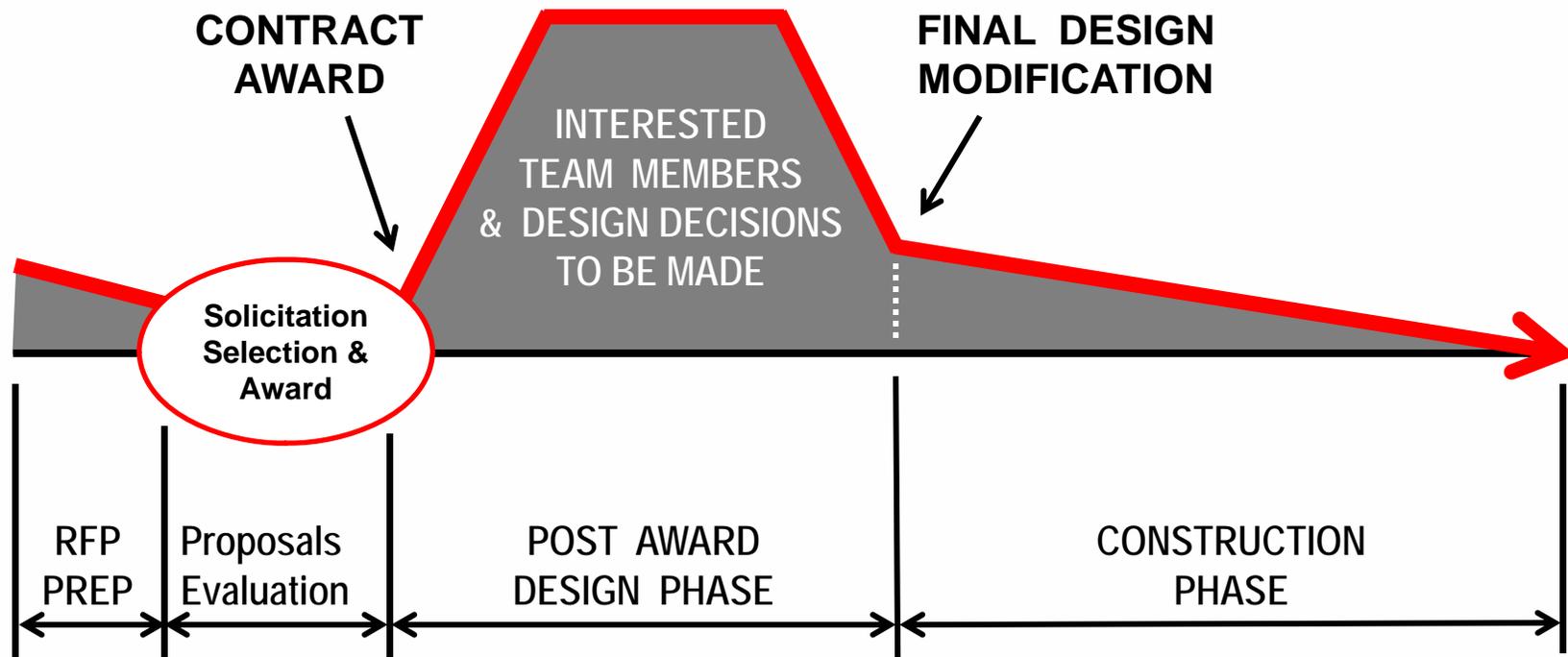


Agenda for the Hour

1. Design Decision Post Award
2. The Order of Precedence Clause
3. Design Decisions Over Time
4. Design Decision Tree
5. A Few Examples
6. Tabletop Scenario Discussions & Reports



Design Decisions Post Award



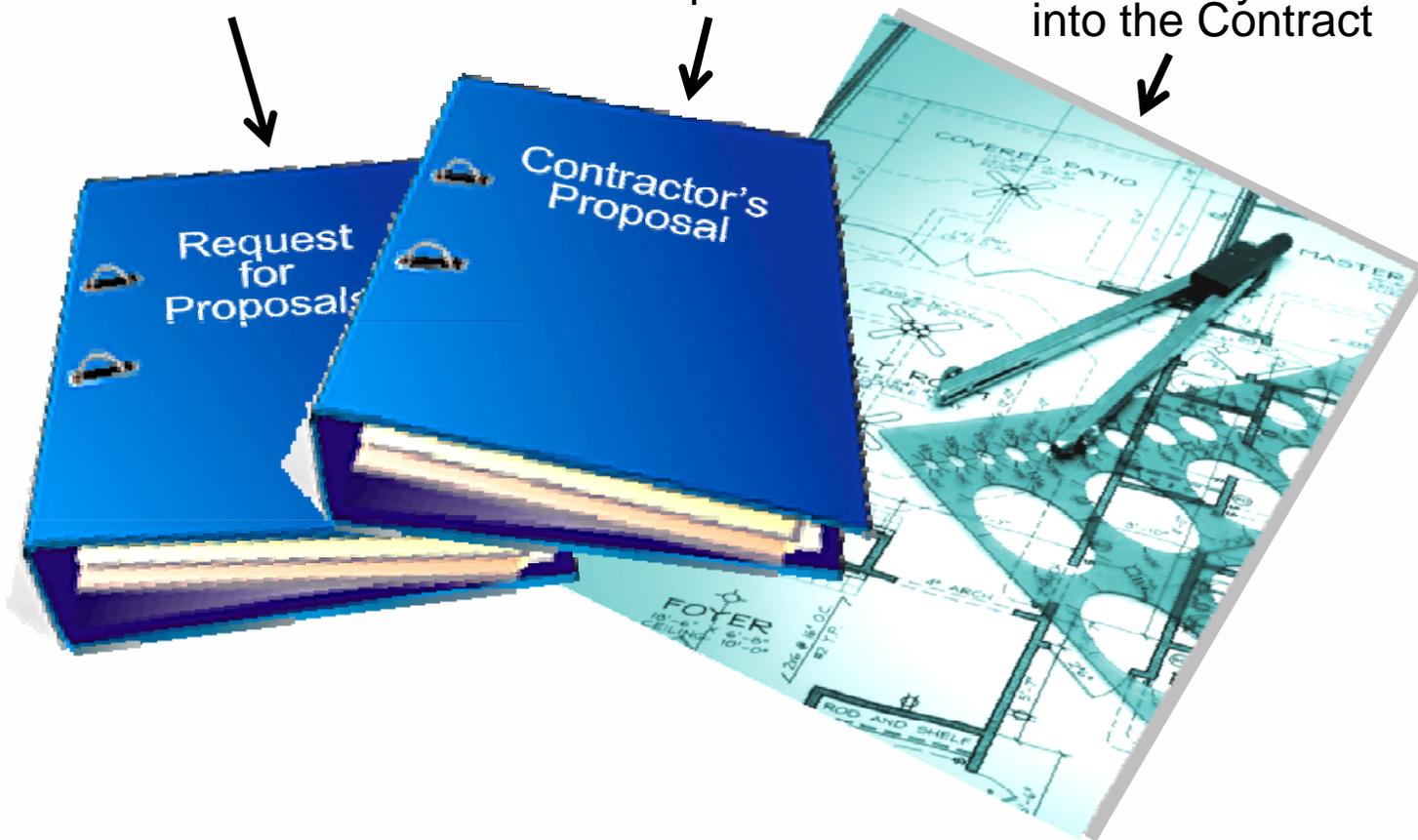


DB Order of Precedence



Elements of the Contract

Request for Proposals And Amendments + Contractor's Proposal + Final Design Documents when Formally Modified into the Contract

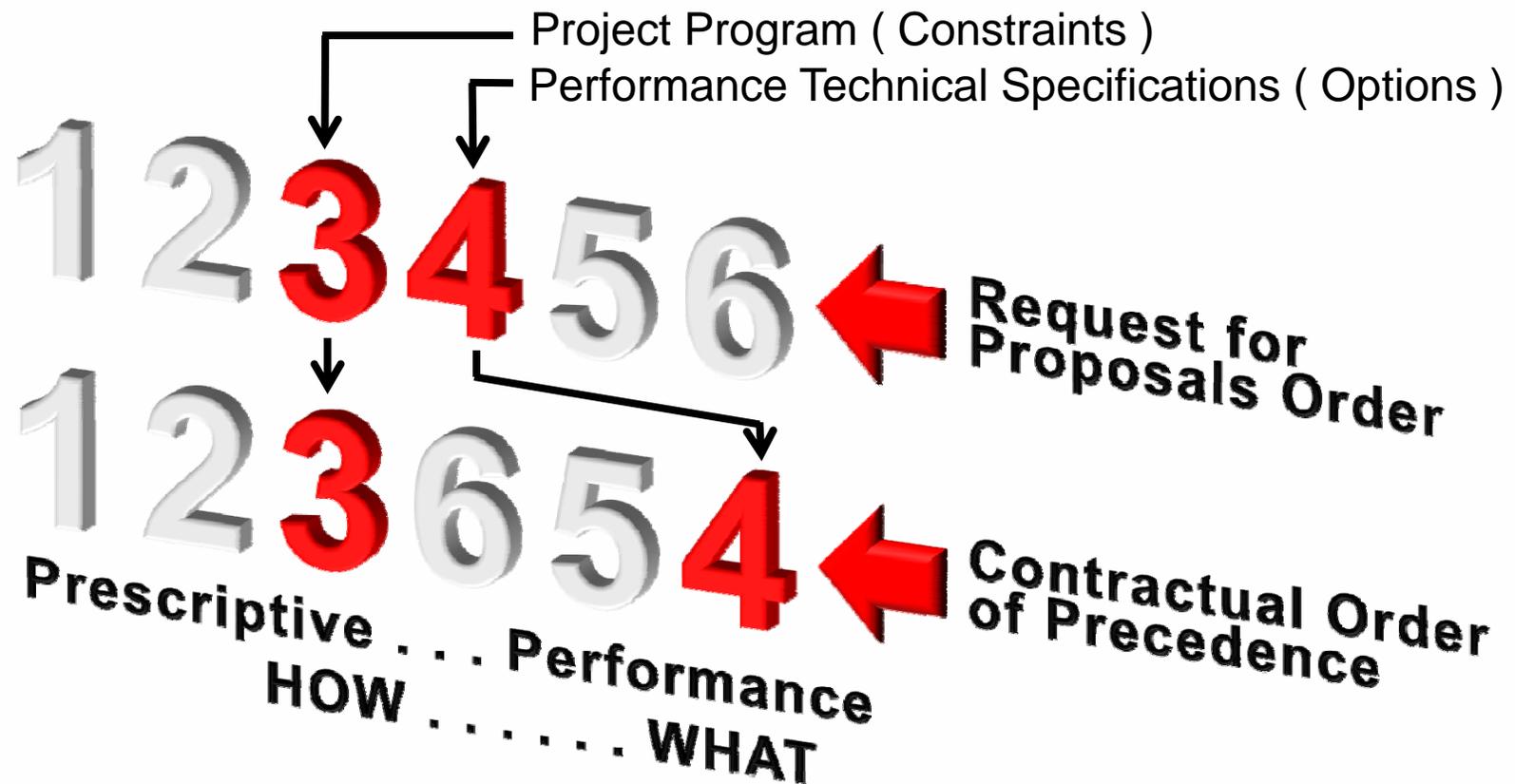




DB Order of Precedence

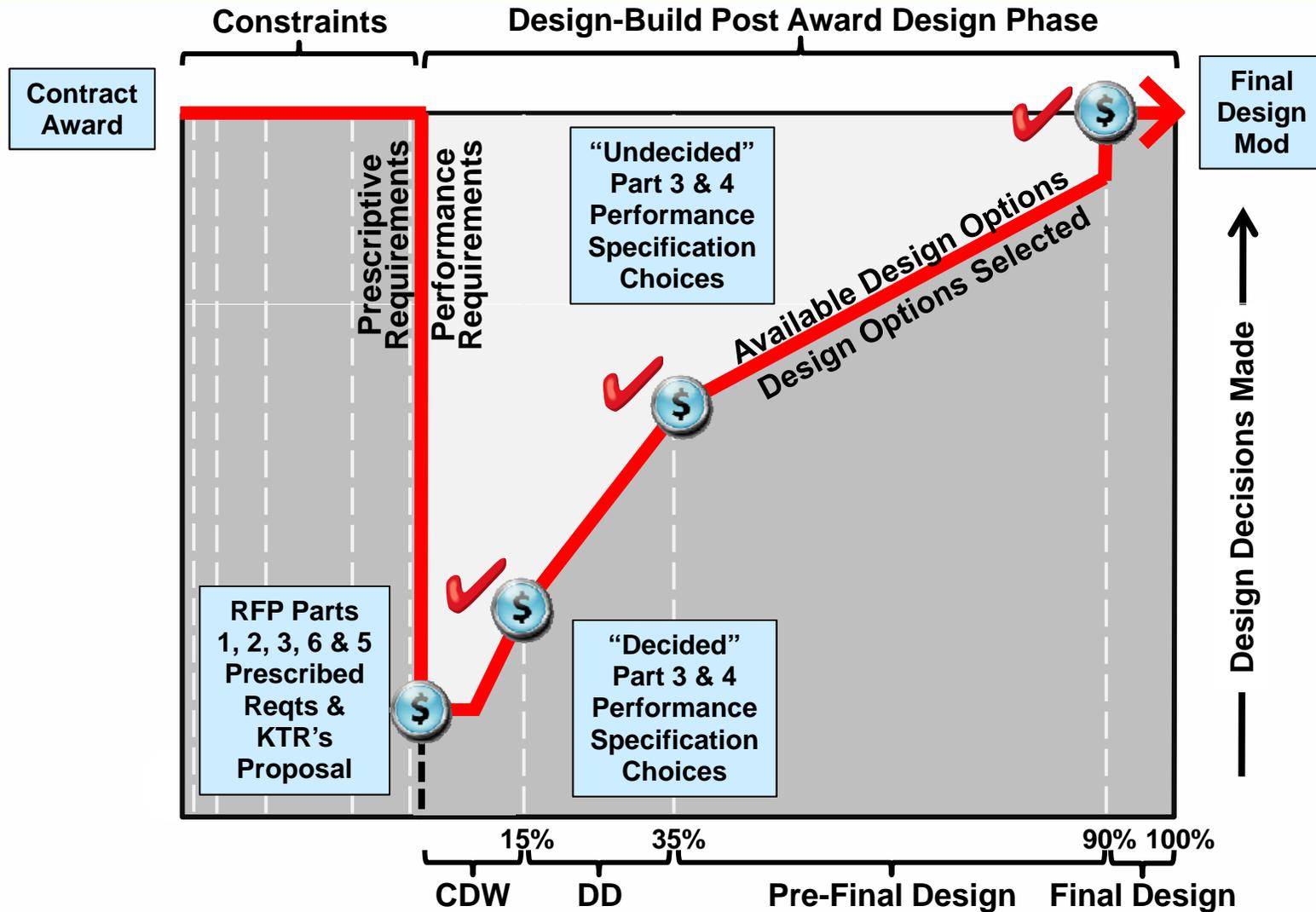


Parts of the RFP



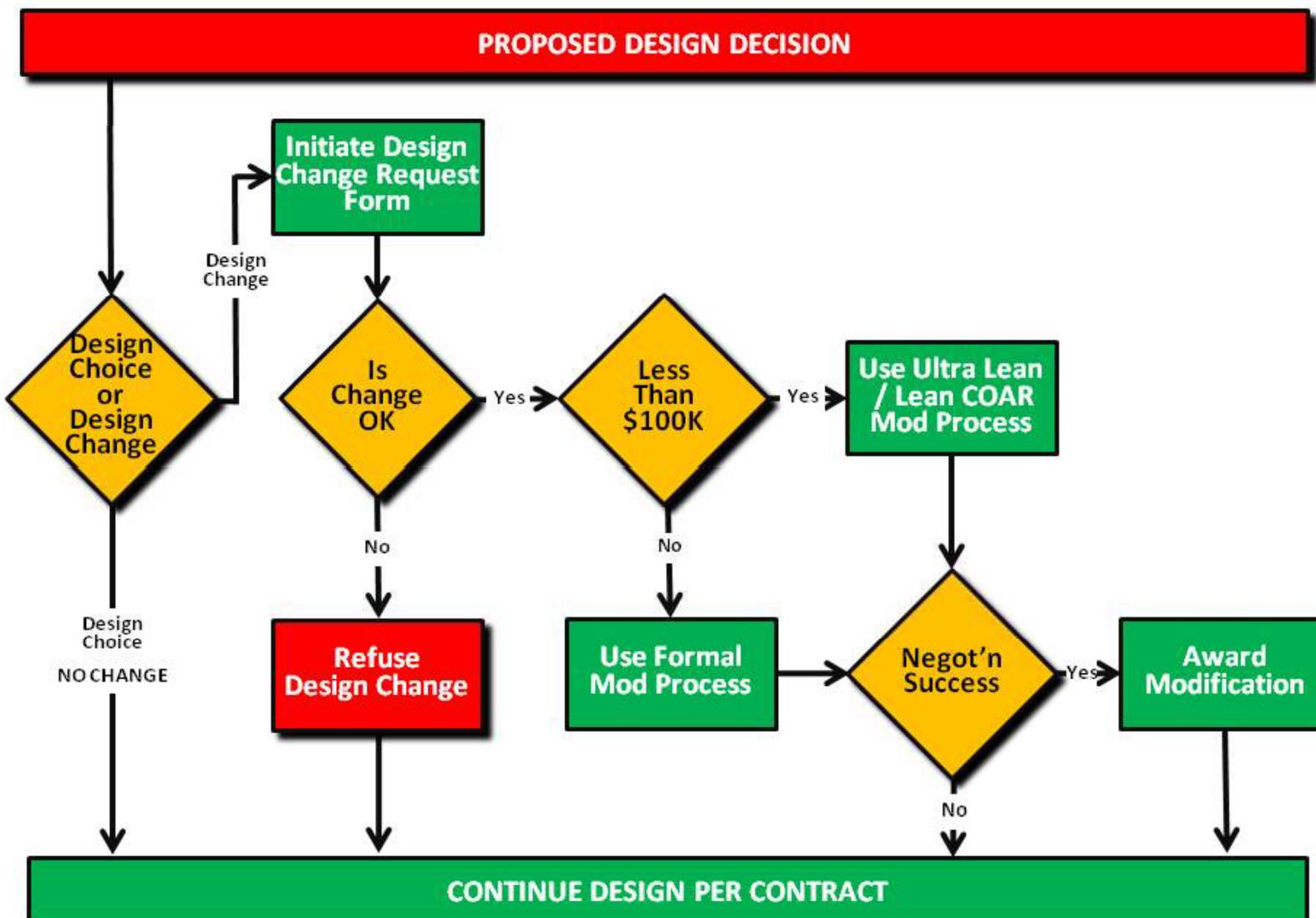


DB Design Decisions over Time





Design Decision Tree





Design Decision Example



Waste & Vent Piping

Scenario

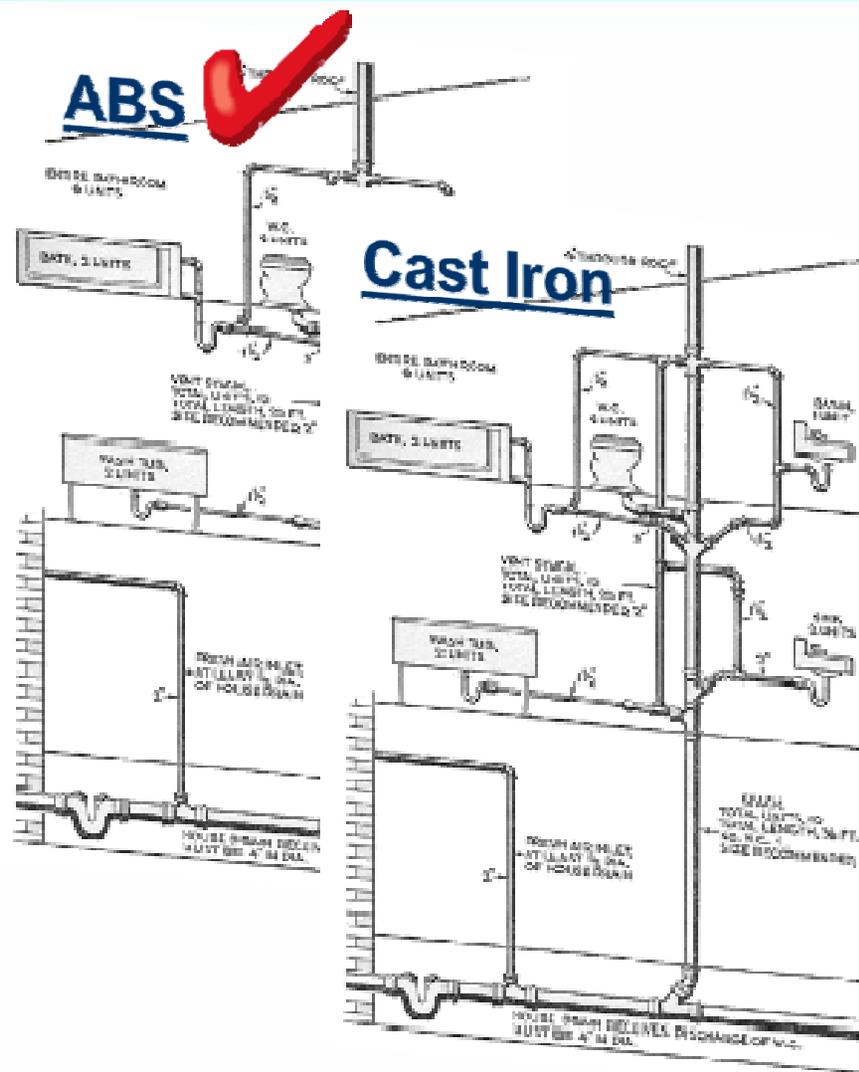
RFP Part 4	...	ABS
		Cast Iron
RFP Part 3	...	No Constraints
KTR's Choice	...	ABS
Team Input	...	None

Design Choice or Design Change ?

DESIGN CHOICE

Contract Modification Required ?

NO MODIFICATION





Design Decision Example



Interior Doors

Scenario

RFP Part 4	...	Solid Core Wood Hollow Metal
RFP Part 3	...	No Constraints
KTR's Choice	...	Solid Core Wood
Team Input	...	Hollow Metal

Design Choice or Design Change ?

DEPENDS

Contract Modification Required ?

DEPENDS





Design Decision Example



Architectural Hardware

Scenario

RFP Part 4	...	Polished Brass
		Stainless Steel
RFP Part 3	...	Stainless Steel
KTR's Choice	...	Stainless Steel
Team Input	...	Gold Plated Bronze

Design Choice or Design Change ?

POLISHED
BRASS



STAINLESS
STEEL

DESIGN CHANGE

Contract Modification Required ?



MOD REQUIRED



Cost Parameters ?

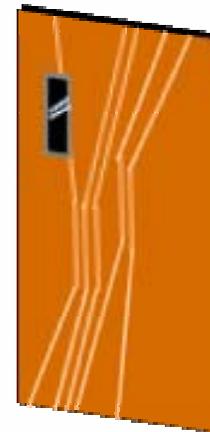


IS COST REALLY AN ISSUE ?

POLISHED BRASS



SOLID CORE WOOD



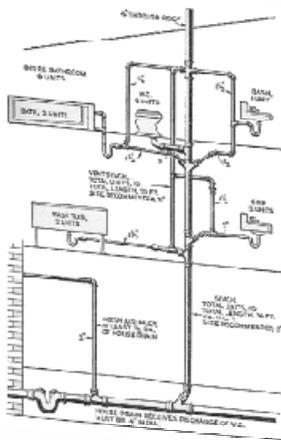
STAINLESS STEEL



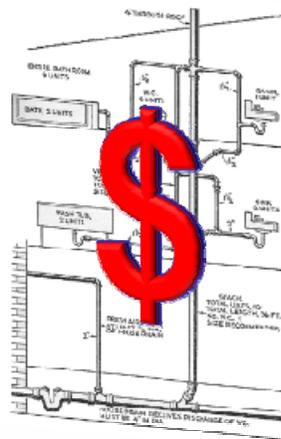
HOLLOW METAL



ABS



CAST IRON





Scenario #1

Concept Design Workshop



Architectural Hardware

RFP Part 4	...	Polished Brass Stainless Steel
RFP Part 3	...	Stainless Steel
KTR's Choice	...	Stainless Steel
Team Input	...	None

Interior Doors

RFP Part 4	...	Solid Core Wood Hollow Metal
RFP Part 3	...	Solid Core Wood
KTR's Choice	...	Solid Core Wood
Team Input	...	Hollow Metal

Design Choice or Design Change ?

Contract Modification Required ?

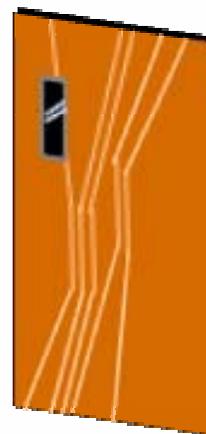
**POLISHED
BRASS**



**STAINLESS
STEEL**



**SOLID
CORE
WOOD**



**HOLLOW
METAL**





Scenario #1a

Concept Design Workshop



Architectural Hardware

RFP Part 4	...	Polished Brass Stainless Steel
RFP Part 3	...	Mute
KTR's Choice	...	Polished Brass
Team Input	...	Stainless Steel

Interior Doors

RFP Part 4	...	Solid Core Wood Hollow Metal
RFP Part 3	...	Solid Core Wood
KTR's Choice	...	Solid Core Wood
Team Input	...	Hollow Metal

Design Choice or Design Change ?

Contract Modification Required ?

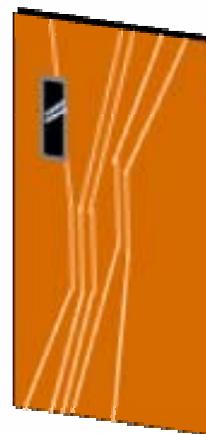
**POLISHED
BRASS**



**STAINLESS
STEEL**



**SOLID
CORE
WOOD**



**HOLLOW
METAL**





Scenario #2

Concept Design Workshop



Architectural Hardware

RFP Part 4	...	Polished Brass
		Stainless Steel
RFP Part 3	...	Stainless Steel
KTR's Choice	...	Stainless Steel
Team Input	...	Gold Plated Bronze

Waste & Vent Piping

RFP Part 4	...	ABS
		Cast Iron
RFP Part 3	...	Cast Iron
KTR's Choice	...	Cast Iron
Team Input	...	ABS

Design Choice or Design Change ?

Contract Modification Required ?

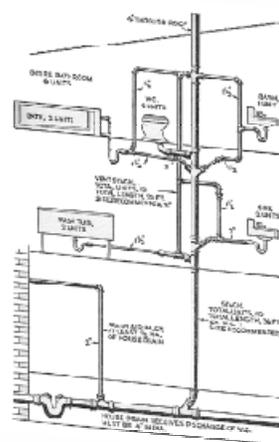
POLISHED BRASS



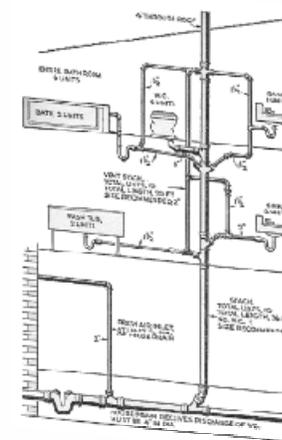
STAINLESS STEEL



ABS



CAST IRON





Scenario #2a

Concept Design Workshop



Architectural Hardware

RFP Part 4	...	Polished Brass Stainless Steel
RFP Part 3	...	Stainless Steel
KTR's Choice	...	Stainless Steel
Team Input	...	None

Waste & Vent Piping

RFP Part 4	...	ABS Cast Iron
RFP Part 3	...	Mute
KTR's Choice	...	ABS
Team Input	...	Cast Iron

Design Choice or Design Change ?

Contract Modification Required ?

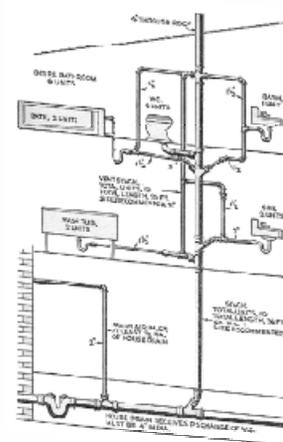
POLISHED BRASS



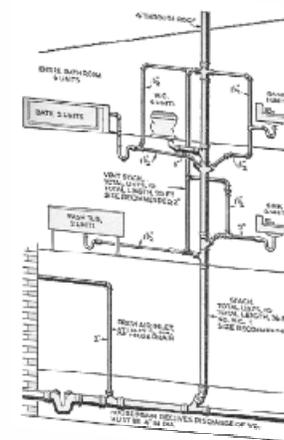
STAINLESS STEEL



ABS



CAST IRON





Scenario #3

Concept Design Workshop



Interior Doors

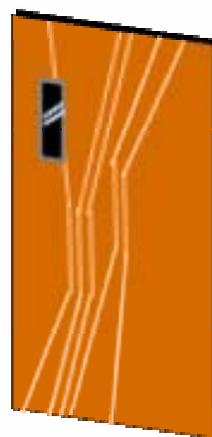
RFP Part 4	...	Solid Core Wood
		Hollow Metal
RFP Part 3	...	Mute
KTR's Choice	...	Solid Core Wood
Team Input	...	Hollow Metal

Waste & Vent Piping

RFP Part 4	...	ABS
		Cast Iron
RFP Part 3	...	Cast Iron
KTR's Choice	...	Cast Iron
Team Input	...	ABS

Design Choice or Design Change ?

Contract Modification Required ?



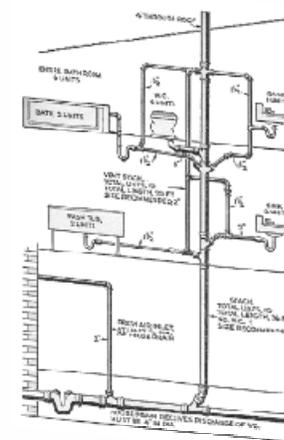
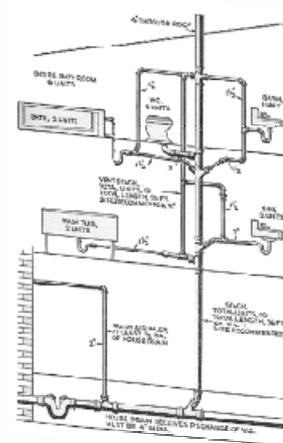
**SOLID
CORE
WOOD**



**HOLLOW
METAL**

ABS

CAST IRON





Scenario #3a

Concept Design Workshop



Interior Doors

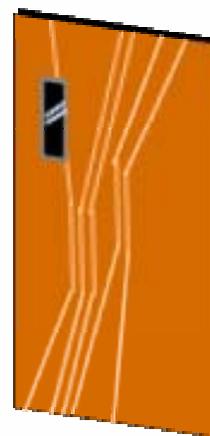
RFP Part 4	...	Solid Core Wood Hollow Metal
RFP Part 3	...	Solid Core Wood
KTR's Choice	...	Solid Core Wood
Team Input	...	Hollow Metal

Waste & Vent Piping

RFP Part 4	...	ABS Cast Iron
RFP Part 3	...	Cast Iron
KTR's Choice	...	Cast Iron
Team Input	...	None

Design Choice or Design Change ?

Contract Modification Required ?

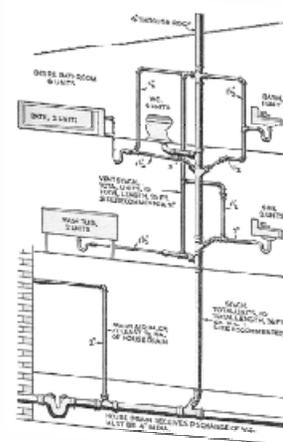


**SOLID
CORE
WOOD**

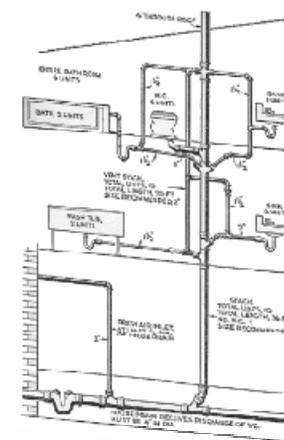


**HOLLOW
METAL**

ABS



CAST IRON





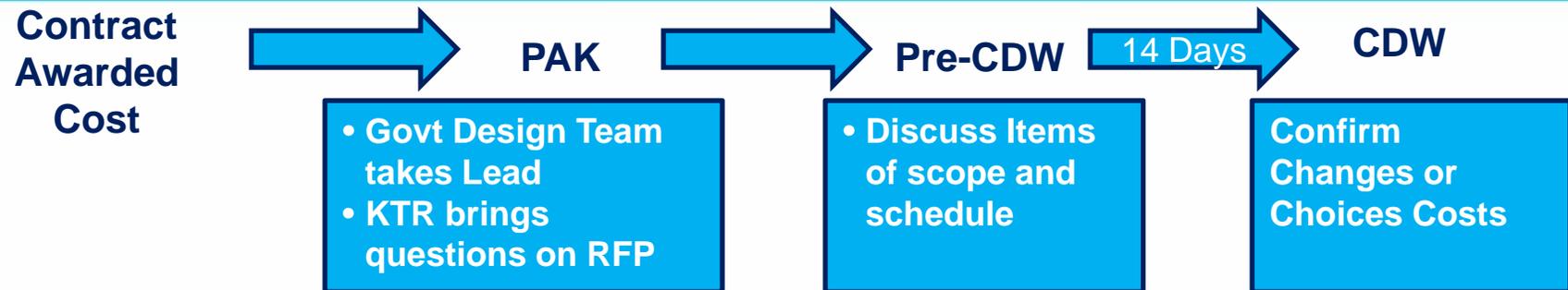
Technical Analysis

Estimating at the Proper Level

Joseph L Bonaparte , CCC
Senior Cost Engineer
NAVFAC Southwest



Cost Position Overview Change-Choice Process



1. **Confirmed Scope And Requirements List (Pre-CDW)**
 - a) Discuss changes or choices against RFP that may impact cost
2. **Scoping Meeting (PM/DM/CE/KTR) (CDW)**
 - a) Scope discussions to form list of Changes/Choices scope items for cost
 - b) Decide on Lean or Ultra Lean approach to cost
3. **Cost Analysis (CDW)**
 - a) Contractor to provide Cost Position – use Sq Ft cost or Assemblies
 - b) Government to provide Cost Position – use Sq Ft cost or Assemblies
4. **Technical Analysis (TA) write up (CDW)**
 - a) Provided to Contracting Officer for negotiation
5. **Close Out Current Cost of Changes/Choices Listing (CDW)**
 - a) Items completed as project moves forward before adding new items
 - b) Additional items to initial items is acceptable
 - c) No new changes or choices after Final CDW Report



CDW Cost Position Overview



Starting Product

Preliminary Design Concepts and Scope Questions

End Product

Change / Choice List with Cost Estimate



Initial Meeting #1

20 Initial Items:
Changes Or Choices Items # 1-20

- Confirmed List
- Scoping Meeting
- KTR Cost Analysis
- Technical Analysis
- Negotiation/Modification
- Close Out Items



Follow Up Meeting #2

10 Supplemental Items stem from Initial List:
Changes Or Choices Items# 21-30
No New Items??

- Confirmed List
- Scoping Meeting
- KTR Cost Analysis
- Technical Analysis
- Negotiation/Modification
- Close Out Items



Additional Meetings #3+

5 Supplemental Items stem from current list:
Changes Or Choices Items# 31-35
No New Items???



Cost Estimate Concept Design



1. Discussion (CDW)

- a) Confirm complete list of accepted changes scope items for cost
- b) Identify which items will use Lean or Ultra Lean approach to cost

2. Cost Estimate Preparation (CDW)

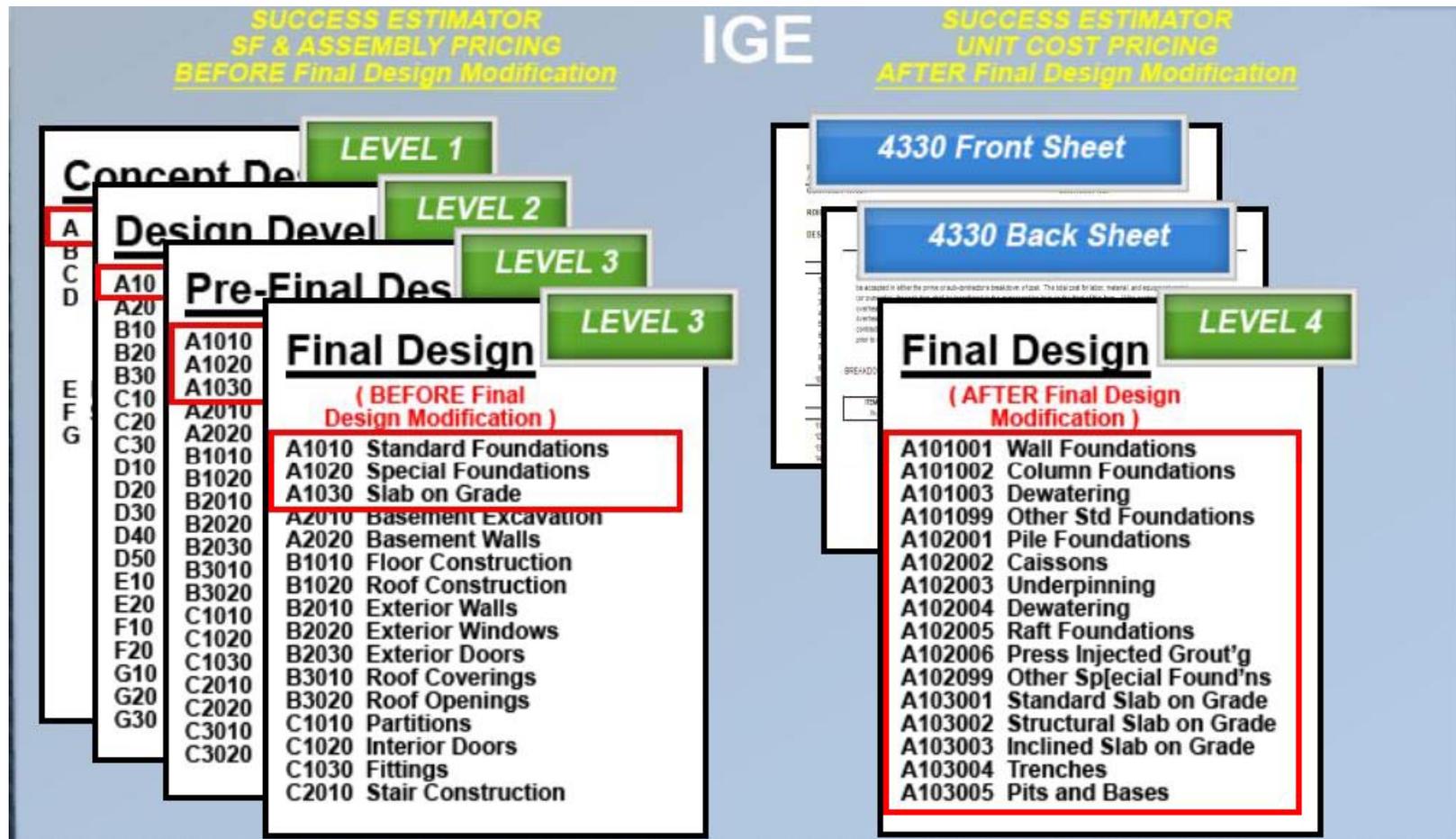
- a) Determine what adds / deducts should be decided upon for changes
- b) Contactor provides Cost Position in Sq Ft Cost or Assemblies
- c) Government provides Cost Position in Sq Ft Cost or Assemblies
- d) Costs consistency essential between KTR & Govt Positions

3. Technical Analysis (TA) write-up (CDW)

- a) Compare KTR & Govt Positions create TA Cost Position & write-up
- b) Provided to Contracting Officer for negotiation



Uniformat II Cost Estimate Levels





Cost Take-Aways



- **Complete list of accepted changes for costs developed is critical**
- **Determine what changes will affect concept design acceptance**
- **Consistency between KTR & Gov't Cost Positions**
 - **Use Square Foot costs and Assemblies during CDW**
 - **Critical for determining fair reasonable cost changes**
- **Use Lean / Ultra Lean process to determine changes to scope items**